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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,609	07/31/2003	Laurakay Bruhn	10021296-1	5153

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AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER
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LIN, JERRY

ART UNIT	PAPER NUMBER
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1631

MAIL DATE	DELIVERY MODE
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11/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/633,609	<b>Applicant(s)</b> BRUHN ET AL.	
	<b>Examiner</b> JERRY LIN	<b>Art Unit</b> 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37, 43-53 and 56-70 is/are pending in the application.
- 4a) Of the above claim(s) 14-16, 20-33, 35-37, 43-48, 51-53 and 58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 34, 49, 50, 56, 57 and 59-70 is/are rejected.
- 7) ☒ Claim(s) 17-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. In view of the Appeal Brief filed on August 29, 2008, PROSECUTION IS  
HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the  
following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply  
under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed  
by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and  
appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth  
in 37 CFR 41.20 have been increased since they were previously paid, then appellant  
must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by  
signing below:

/Marjorie Moran/

Supervisory Patent Examiner, Art Unit 1631

### ***Status of the Claims***

Claims 1-13, 17-19, 34, 49, 50, 56, 57, and 59-70 are under examination.

Claims 14-16, 20-33, 35-37, 43-48, 51-53, and 58 are withdrawn as being drawn  
to a non-elected invention.

Claims 38-42, 54 and 55 are cancelled.

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 59-63 and 65 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The instant claims are drawn to a method of retrieving sub-array patterns. However, as the method does not recite a physical transformation of matter, the method must be tied to another category of invention to be patentable subject matter (For further explanation see, *In Re Bilski* (No. 2007-10030, decided 10/30/2008). In the instant case, the claimed method steps are not tied to another category of invention, and thus are non-statutory.

In addition, instant claims are drawn to a process involving the judicial exception of a computational algorithm. Claims drawn to a judicial exception is non-statutory unless the claims include a practical application of that judicial exception as evidenced by a physical transformation of matter, or if the claimed invention recites a useful, tangible and concrete final result. In the instant claims, there is no physical transformation by the claimed invention, thus the Examiner must determine if the instant claims produce a useful, tangible, and concrete final result. See MPEP 2106.

The instant do not produce a useful, concrete, and tangible final result. A useful, concrete, and tangible final result requirement requires that the claim must set forth a practical application of the mathematical algorithm to produce a real-world result. The instant claims have final step of retrieving a sub-array pattern. However, this final step

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does not indicate that the result is communicated to the outside world or rendered in a tangible form. Thus instant claims do not include a useful, concrete, and tangible final result. Examples of amendments to overcome this rejection include amending the claims to identify/recite a concrete result and to recite that the result is outputted to a display or to a user or outputted in a user readable format. However, applicant is reminded that any amendment must be fully supported and enabled by the originally filed disclosure.

Additionally, instant claim 63 is drawn to a computer program on a computer readable medium that executes the method of claim 59. However, a method embodied in a computer readable medium must still have a useful, concrete, and tangible result. As explained above, the instant claims do not have useful, concrete, and tangible result and thus claim 63 is also non-statutory.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13, 49, 50, 56, 57, 59-63, 65, and 68 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaushikkar (US 2002/0024026 A1).

The instant claims are drawn to a method using a chemical array wherein a test request is received, a sub-array appropriate for that test request is determined, exposing the array to a sample, and reading the sub-array.

Regarding claims 1 and 59, Kaushikkar teaches a method of using a chemical array (page 1, paragraph 0011) that includes receiving a test request that uses a sub-array with probes at multiple feature locations (page 6, paragraphs 0059-0061); receiving a pattern based on the test requests which are locations of features that make up a sub-array (page 2, paragraph 0014); exposing the array to a sample (page 3, paragraph 0038); and reading the sub-array (page 2, paragraph 0014), wherein the test request array references a type of test (page 10, paragraph 0089).

Regarding claims 2-13, 59, 60, 61, 65-68, Kaushikkar teaches wherein the memory carries different patterns based on the test request (abstract; page 7, paragraph 0063) as in claims 2 and 4; reading an array with an identifier as in claims 3, 8, 9, 10, and 61 (i.e., a bar code) (page 4, paragraph 0044); wherein signals from feature locations outside the sub-array pattern are not acquired as in claims 5 and 65 (page 2, paragraphs 0016-0017); wherein the signal that represents binding is saved from the sub-arrays and the same signal processing method is used as in claims 6 and 12 (page 10, paragraph 0088-0090); wherein the test request is associated with the array as in claim 7 (page 10, paragraph 0088-0090); wherein multiple test requests associated with an array are read as in claim 11 (page 6, paragraph 0061; page 11, paragraph 0098); wherein the locations outside the sub-array pattern are incapable of providing signal data as in claim 13 (page 2, paragraphs 0016-0017) (i.e., portions of

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the array are incapable of providing a signal data because they lack a radiation source that is focused on them); where multiple patterns are present on a chemical array as in claims 60 and 68 (page 6, paragraph 0061); where the patterns may be contiguous or non-contiguous as in claims 66 and 67 (page 6, paragraph 0061).

Regarding claims 49, 50, 56, 57, and 63, Kaushikkar teaches an apparatus with an interrogating source and a detector (page 11, paragraph 0094); and a computer program to execute the instant methods (page 11, paragraph 0094).

Regarding claim 62, Kaushikkar teaches transmitting information to and from a remote location (page 7, paragraph 0063; page 9, paragraph 0083; page 11, paragraph 0092).

#### Response to Arguments in the Appeal Brief

6. Applicants have responded to this rejection by attempting to distinguish a test request from a test type. However, according the specification at page 9, lines 13-21, a test type includes testing a sample for a particular nucleic acid or peptides. The probe locations taught by Kaushikkar contain probes (page 10, paragraph 0089) for nucleic acids or peptides. Thus, selecting one of the files by Kaushikkar determines what nucleic acids or peptides are to be tested in a sample. By selecting what nucleic acids or peptides are to be tested, Kaushikkar teaches selecting a particular test type.

Applicants also argue that Kaushikkar does not teach using an array identifier and a test request. However, Kaushikkar teaches reading an array with an identifier as in claims 3, 8, 9, 10, and 61 (i.e., a bar code) for use in both creating the array as well

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as identifying an created array (page 4, paragraph 0044; pages 5-6, paragraph 0056-0061; page 10, paragraph 0090).

Applicants state Kaushikkar does not teach where rendering the feature locations outside any retrieved subarray pattern is incapable of providing signal data. However, the instant claims do not recite that the probes are purposefully damaged. Rather the claims state that the probes are incapable of providing signal data. Kaushikkar teaches where the locations outside the sub-array pattern are incapable of providing signal data as in claim 13 (page 2, paragraphs 0016-0017) (i.e., portions of the array are incapable of providing a signal data because they lack a radiation source that is focused on them).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to



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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaushikkar (US 2002/0024026 A1) as applied to claims 1-13, 49, 50, 56, 57, 59-63, 65, and 68 above.

The instant claims are drawn to a method using a chemical array wherein a test request is received, a sub-array appropriate for that test request is determined, exposing the array to a sample, and reading the sub-array, where the sub-array patterns may or may not overlap.

Although, Kaushikkar teaches the "user could specify the locations of a subset, or all of, the probes by specifying coordinates of each of the subset, or of all, of the probes in relation to a reference coordinate on the substrate" (page 6, paragraph 0061), Kaushikkar does not explicitly teach that the subsets may or may not overlap. However, one of ordinary skill in the art may specify any subset in an array such that subsets may or may not overlap. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to create subsets that overlap or not overlap because specifying probes that are common to two subsets is part of the ordinary capabilities of a person of ordinary skill in the art. Using the known technique of specifying common probes in two different subsets for creating the desired assay would have been obvious to one of ordinary skill.

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9. Claims 34 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaushikkar (US 2002/0024026 A1) as applied to claims 1-13, 49, 50, 56, 57, 59-63, 65, and 68 above, and further in view of Sandstrom (US 2005/0079603).

The instant claims are drawn to the same method of claim 1, wherein the feature locations outside the sub-array pattern are masked (claim 64) and the sample is from an individual and the sub-array pattern is retrieved using the identification of the individual (claim 34).

Kaushikkar is applied as above.

Although Kaushikkar teaches a generic method where portions of an array may be chosen for an experiment by a user, Kaushikkar does not teach the source of a sample or that the features outside the subarray are masked.

Sandstrom teaches a method of masking a microarray and the sample is from an individual and a test is retrieved using the identification of the individual (page 3, paragraphs 0022; page 9, paragraph 099; page 10, paragraph 0104).

It would have been obvious to one of ordinary skill in the art at the time of the invention, to combine the methods of Kaushikkar and Sandstrom to gain the benefit of being able to excite target sites. Sandstrom teaches that using a mask allows the user to target specific sites on a microarray (page 10, paragraphs 0104, 0106). This is advantageous because it allows the user to customize a microarray for a particular experiment. Similarly, Kaushikkar also has a goal of customizing the use of an array based on the user's choice. Given, that Kaushikkar's goal is to customize the use of an array, and Sandstrom teaches a method that allows further customization, one of

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ordinary skill in the art would have been motivated to combine the methods of Kaushikkar and Sandstrom to customize an array for a particular experiment.

Furthermore, Kaushikkar teaches that one advantage of his method is that tests based on the sub-arrays may be run without knowing the scheme of the whole array (page 1, paragraph 0011). Given that Sandstrom teaches that tests are performed on the basis of the individual, one of ordinary skill in the art would have been motivated to use Kaushikkar's method of selecting sub-arrays for an individual by using just the individual's identification and not to require the user to know the scheme of the array.

#### Response to Arguments in the Appeal Brief

10. Applicants have responded to this rejection by relying on their arguments to Kaushikkar. Please see above for the Examiner's response.

This rejection is maintained from the previous office action.

#### ***Objections***

11. Claims 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Withdrawn Rejections***

12. Applicant's arguments, filed August 29, 2008, with respect to the rejection made under 35 U.S.C. §103 in view of Kaushikkar and Podyminogin et al. have been fully

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considered and are persuasive. The references do not teach actively (purposefully) damaging probes outside any retrieved sub-array pattern. This rejection has been withdrawn.

***Note***

13. The Examiner acknowledges that Applicants have pointed out that claims 56, 57, and 63, which are drawn to computer program products, are described in the specification, on page 8, lines 12-18, as tangible products such as floppy disks, hard disks, CDs, and DVDs,

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JERRY LIN whose telephone number is (571)272-2561. The examiner can normally be reached on 7:00-5:30pm, M-TH.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie A. Moran can be reached on (571) 272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry Lin/  
Examiner, Art Unit 1631  
11/5/08